|                  |   |   |          |                 |              |          | Ш  | Ш                |                             |            |          |                   | L       | <u> 10/7</u>   | <u>′35</u>      | ,86       | 2        |           |                |            |                 | <u> PO</u> |                     |          |         |                 |          | <br> |
|------------------|---|---|----------|-----------------|--------------|----------|--|------------------|-----------------------------|------------|----------|-------------------|---------|----------------|-----------------|-----------|----------|-----------|----------------|------------|-----------------|------------|---------------------|----------|---------|-----------------|----------|------|
|                  |   |   |          |                 |              |          |  |                  |                             |            |          |                   |         | Examiner       |                 |           |          |           |                |            |                 | Art Unit   |                     |          |         |                 |          |      |
|                  |   |   |          |                 |              |          |  |                  |                             |            |          |                   |         |                |                 |           |          |           |                |            |                 |            |                     |          |         |                 |          |      |
|                  | 1 12 5 (5) ( 10 5) ( 5 5 5) ( 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 |   |          |                 |              |          |  |                  |                             |            |          |                   |         | Sung H. Pak    |                 |           |          |           |                |            |                 | 287        | 4                   |          |         |                 |          |      |
|                  |   |   |          |                 |              |          |  |                  |                             |            |          |                   |         |                |                 |           |          |           |                |            |                 |            |                     |          |         |                 |          |      |
|                  |   |   |          |                 |              |          |  |                  |                             |            | ah n     | ume               | oral    | ١              |                 |           |          |           |                |            |                 |            |                     |          |         | Ì               |          |      |
|                  |   | √   | Rejected |                 |              |          | -  | (,               | (Through numer<br>Cancelled |            |          |                   | ,       |                | N               | Not       | n-Ele    | cted      | cted           |            | Appeal          |            |                     |          |         |                 |          |      |
|                  |   |   |          |                 |              | 4        |  | Щ                | - Janoenea                  |            |          |                   |         |                |                 |           |          |           |                |            | A               |            |                     |          |         |                 |          |      |
|                  |   | _   | ` ^      | Allowed         |              |          |  | ÷                |                             | Restricted |          |                   |         |                | H               |           | Inte     | erfere    | nco            |            |                 | 0          | bje                 | ctod     |         |                 |          |      |
|                  |   | =   | A        | IIOW            | vec          | '        |  | ┍                | Restricted                  |            |          |                   |         |                |                 | mite      | nere     | ince      |                | ۱۲۱        | U               | Dje        | Cleu                | •        |         |                 |          |      |
|                  |   |   |          |                 |              |          |  | ш                |                             |            |          |                   |         |                | , ,             |           |          |           |                | ,          |                 |            |                     |          | •       |                 |          |      |
| Cla              | im  |   |          |                 | D            | ate      |  |                  | $\Box$ .                    | Cla        | aim      |                   |         | - (            | Date            | ,         |          |           | Cla            | aim        |                 | Date       |                     |          |         |                 |          |      |
|                  |   | 4   |          | T               | Т            | $\top$   | П  | П                |                             |            | =        | 4                 |         |                | $\Box$          |           |          | $\Box$    |                |            | П               |            |                     |          |         |                 | 1        |      |
| Final            | Original  | 12/15/04  |          |                 | - 1          |          | l  |                  |                             | Final      | Original | 12/15/04          |         |                |                 |           |          |           | Final          | Original   |                 |            | 1                   |          |         |                 |          |      |
| 🛅                | Örig  | 21  |          |                 | - 1          |          | l  |                  |                             | ᇉ          | Ę        | 2                 |         |                |                 |           |          |           | i <del>E</del> | ij         |                 |            |                     |          |         |                 |          |      |
|                  |   |   |          |                 |              |          |  | Ш                |                             |            |          |                   | $\perp$ |                |                 | _         |          |           |                | 1          |                 |            | $\sqcup \downarrow$ |          | $\perp$ | $\Box$          | 4        |      |
|                  | 1   | 2   |          |                 | 4            | $\perp$  | ┖  | Ш                | _                           |            | 51       | 4                 | $\perp$ | _              | Ш               | _         |          | Ш         |                | 101        |                 |            | L                   | -        |         |                 | 4        |      |
| ļ                | 2   | Ш   | _        | _               | 4            |          | ┞-   | Ш                | _                           |            | 52       | 1                 | +       | +              | Щ               | _         | _        | Ш         |                | 102        | $\sqcup$        | $\perp$    | $\vdash$            |          |         |                 | _        |      |
|                  | 3   | Ш   | $\dashv$ | $\dashv$        | -            |          | ╀  | $\vdash$         | _                           |            | 53       | -                 | +       | +              | Н               | $\dashv$  |          | ++        |                | 103        | $\vdash$        | +          | $\vdash$            |          | -       |                 | -        |      |
|                  | 4   | Н   |          | -               | -+           | +        | ⊢  | Н                | $\dashv$                    | <u> </u>   | 54<br>55 | -                 | +       | +              | $\vdash \vdash$ | $\dashv$  | $\dashv$ | $\vdash$  |                | 104<br>105 | $\vdash$        | +          | ╁                   | +        | +       | -               | ┥        |      |
|                  | 5<br>6  | Н   | $\dashv$ | $\dashv$        | +            | +        | ╁  | Н                | -                           |            | 56       | H +               | +       | +              | Н               | -         | +-       | +         | -              | 105        | $\vdash$        |            | ╁═┼                 |          | +       | -               | ┨        |      |
|                  | 7   | Н   | $\dashv$ | $\dashv$        | $\dashv$     | +        | ╁  | H                | -                           |            | 57       | H +               | +       | +              | $\dashv$        | $\dashv$  | +        | +         | _              | 107        | $\vdash$        | _          | ╁                   | +        |         |                 | -        |      |
| <del> </del>     | 8   | Н   | $\dashv$ | $\dashv$        | +            | $\dashv$ | ╁  | $\vdash$         | $\dashv$                    | -          | 58       | H +               | - -     | +-             | Н               | $\dashv$  |          | $\forall$ |                | 108        | $\vdash$        |            | $\vdash$            |          | +       |                 | ┨        |      |
|                  | 9   | Н   |          | +               | +            |          | 1  | $\Box$           | $\dashv$                    |            | 59       | 11                | +       |                | $\Box$          |           | _        | $\Box$    |                | 109        | $\vdash$        | _          | Ħ                   | _        | $\top$  |                 | ┪        |      |
|                  | 10  | Ш   |          | 十               | 十            |          | 1  |                  | ╗                           |            | 60       | $\forall \top$    | 1       |                |                 | $\neg$    | _        | $\Box$    |                | 110        |                 |            |                     | $\neg$   | _       |                 |          |      |
|                  | 11  | Ш   |          | 一               | 寸            | 1        | t  | П                |                             |            | 61       |                   | T       |                | T               | $\exists$ | İ        | П         |                | 111        |                 |            |                     |          | $\top$  |                 |          |      |
| 1                | 12  | П   |          |                 | 1            | 1        |  |                  |                             |            | 62       | П                 | T       |                |                 |           |          | $\Box$    |                | 112        |                 |            |                     |          |         |                 | ]        |      |
|                  | 13  |   |          |                 |              |          |  |                  |                             |            | 63       |                   |         |                |                 |           |          |           |                | 113        |                 |            |                     |          |         |                 | ]        |      |
|                  | 14  |   |          |                 | $\Box$       |          |  |                  |                             |            | 64       |                   |         |                |                 |           |          |           |                | 114        | Ш               |            | $\sqcup$            |          |         |                 | _        |      |
|                  | 15  | Ш   | _        | _               | 4            |          | _  | Ш                | _                           |            | 65       | Ш.                | _ _     | -              |                 | _         | _        | Ш         |                | 115        | $\sqcup$        |            | $\sqcup$            |          |         |                 | 4        |      |
|                  | 16  | Ш   | _        | _               | 4            | _        | _  | Ш                | _                           |            | 66       | Ш                 | _       | —              | $\dashv$        | _         |          | -         |                | 116        | $\sqcup$        | _ _        | $\vdash$            | - -      | _       |                 | -        |      |
|                  | 17  | -1  | _        | +               | +            | +        | _  | Н                | _                           |            | 67       | ╌╁┼╌              |         | +              | -1              | _         | -        | H         |                | 117<br>118 | 1               | -          | ⊢                   |          | -       |                 | 4        | •    |
|                  | 18<br>19  | Н   | $\dashv$ |                 | +            | +-       | -  |                  | $\dashv$                    |            | 68<br>69 | ш                 |         |                | $\dashv$        | -+        | -        | +         | -              | 119        | $\vdash$        | -          | $\vdash$            | +        | +       | -               | -        |      |
|                  | 20  | Н   | -        | -+              |              | ╅        | -  | $\vdash$         | {                           |            | 70       |                   | +-      | +              | $\dashv$        | -         |          |           |                | 120        |                 | +          | $\vdash$            | +        | +       |                 | ┥        |      |
|                  | 21  | Н   | -        |                 | +            | ┰        | ╁  | $\vdash$         | -                           |            | 71       | ₩                 | +       | +              | $\dashv$        | $\dashv$  | +        | H         | $\vdash$       | 121        | $\vdash$        |            | <del>   </del>      | +        | +       | -               | ┪        |      |
|                  | 22  | Н   | $\dashv$ | $\dashv$        | +            | +        | $\vdash$   | $\vdash$         | _                           |            | 72       |                   | ╅       | +              | $\dashv$        |           | $\top$   | H         |                | 122        | $\vdash$        |            |                     | +        | +-      | $\vdash$        | 7        |      |
|                  | 23  | H   | $\neg$   | $\neg \uparrow$ | 十            | $\top$   | T  | $\Box$           | $\dashv$                    |            | 73       |                   | ╅       | $\top$         | $\dashv$        | _         | _        | П         |                | 123        | $\Box$          | 1          | Ħ                   | 1        | 1       |                 | 7        |      |
|                  | 24  | П   |          |                 | 十            |          | Т  | $\Box$           |                             |            | 74       |                   | _       |                |                 |           | $\neg$   | $\Box$    |                | 124        |                 |            |                     |          |         |                 | 7        |      |
|                  | 25  |   |          |                 |              |          |  |                  |                             |            | 75       |                   |         |                |                 |           |          |           |                | 125        |                 |            |                     |          |         |                 |          |      |
|                  | 26  |   |          |                 |              |          |  |                  |                             |            | 76       |                   |         |                |                 |           |          | $\Box$    |                | 126        |                 |            |                     |          |         |                 | _        |      |
|                  | 27  | Ш   | _        |                 | _            |          |  | Ш                | _                           |            | 77       | $\perp \parallel$ | _       |                |                 | _         |          | Ш         |                | 127        |                 |            | $\vdash$            | $\perp$  | 4       | $\vdash$        | 4        |      |
| <u> </u>         | 28  | Ш   | 4        | _               | _            | 4_       | ┡  | Ш                | _                           |            | 78       |                   | _       | 4_             |                 |           |          | $\sqcup$  | $\vdash$       | 128<br>129 |                 |            | $\vdash$            | -        | $\perp$ |                 | 4        |      |
| $\vdash$         | 29  | H   | $\dashv$ | +               | +            | +        | $\vdash$   | $\sqcup$         | _                           | <u> </u>   | 79       | -#-               | - -     |                |                 | -         | - -      | Н         | $\vdash$       | 129        | $\vdash \vdash$ |            | $\vdash \vdash$     | - -      | +       | <del>   -</del> | 4        |      |
|                  | 30  | H   | $\dashv$ |                 | +            |          | $\vdash$   | $\vdash \vdash$  |                             |            | 80       | -#-               | - -     | $\dashv\dashv$ | $\vdash$        | -         | - -      | H         | $\vdash$       | 130<br>131 | $\vdash \vdash$ | +          | $\vdash$            | +        | +       |                 | -        |      |
| <del>  </del>    | 31<br>32  |   |          | +               | +            | +        | ╁  | $\vdash$         | $\dashv$                    | <u> </u>   | 81<br>82 | ++                | +       | +              | $\vdash$        | $\dashv$  | +        | H         |                | 132        | $\vdash \vdash$ |            |                     | +        | +       | $\vdash$        | $\dashv$ |      |
| $\vdash$         | 33  | H   |          | +               | +            |          | +-   | ┯┤               | $\dashv$                    | _          | 83       | +                 | +       | +              | $\dashv$        | $\dashv$  | +        | H         | -              | 133        | $\vdash \vdash$ | +          | $\vdash$            | +        | 1-      | -               | 1        |      |
| ·                | 34  |   | $\dashv$ | $\dashv$        | $\dashv$     | +-       | ╫  | $\vdash$         | $\dashv$                    |            | 84       | +                 | +       | +-             |                 | -+        |          | H         | $\vdash$       | 134        | H               |            |                     | +        | +       | -               | -        |      |
|                  | 35  | H   | 寸        | 十               | +            |          | t  | $\vdash$         | $\dashv$                    |            | 85       | 11-               |         | +-             |                 | 7         | - -      | $\vdash$  |                | 135        |                 |            |                     | $\top$   | $\top$  |                 | 1        |      |
|                  | 36  |   | T        | $\top$          | $\top$       | -        |  |                  |                             |            | 86       | 11                | $\top$  | 1-             |                 | 7         |          | П         |                | 136        | $\vdash$        |            |                     | 1        |         |                 | 1        |      |
|                  | 37  |   |          |                 | $\top$       |          |  | П                |                             |            | 87       | $\top$            |         | $\top$         |                 |           | $\top$   | П         |                | 137        | П               |            |                     |          |         |                 | 7        |      |
|                  | 38  |   |          |                 |              |          |  |                  |                             |            | 88       | $\prod$           |         |                |                 |           |          |           |                | 138        |                 |            |                     |          |         |                 | ]        |      |
|                  | 39  |   |          | $\Box$          | $\perp$      |          |  |                  |                             |            | 89       |                   |         |                |                 |           |          |           |                | 139        |                 |            |                     |          |         |                 | ]        |      |
|                  | 40  | Ш   | _[       |                 | _[_          |          | $\Box$   |                  | _                           |            | 90       | $\coprod$         |         | Ш              | Ш               | $\perp$   | _        | Щ         |                | 140        | Щ               |            | Щ                   |          | $\perp$ |                 | 4        |      |
|                  | 41  | $\sqcup$  | _        | $\bot$          | $\downarrow$ | $\perp$  | _  | $\sqcup$         | _                           | ļ          | 91       | $\coprod$         | $\bot$  | $\perp \mid$   |                 | _         | -        | Ш         |                | 141        | $\sqcup$        | -          | $\sqcup$            |          | 4-1     |                 | 4        |      |
|                  | 42  | $ \!$ | _        | $\downarrow$    | +            | - -      |  | $\sqcup$         | _                           |            | 92       | +-                | +       | +              | $\dashv$        | _         | $\perp$  | Н         |                | 142        | $\dashv$        |            | -                   | -        | +       | -               | 4        |      |
|                  | 43  | Н   | $\dashv$ | +               | +            | +        | $\vdash$   | Н                | $\dashv$                    | ļ          | 93       |                   | +       | +              | -               | -         | -        | $\vdash$  |                | 143<br>144 | $\vdash \vdash$ | +          | $\vdash \vdash$     |          | -       |                 | -        |      |
|                  | 44<br>45  | ++  | $\dashv$ | +               | +            | +        | $\vdash$   | $\vdash$         |                             | <b></b>    | 94<br>95 | +-                | +       | +              | -               | $\dashv$  | +        | $\vdash$  | -              | 144        | $\vdash$        | +          | $\vdash$            |          | +       | -               | ┨        |      |
| <del>     </del> | 46  | Н   | +        | +               | +            | +        | $\vdash$   | $\vdash$         | $\dashv$                    |            | 96       | ₩                 | +       | +              |                 | $\dashv$  |          | H         | -              | 146        | -               | -          | $\vdash$            | $\dashv$ | -       |                 | $\dashv$ |      |
|                  | 47  | ┝╂╢   | $\dashv$ | +               | +            | +-       | 1  | H                | $\dashv$                    |            | 97       | <del>-</del>      | +-      | +              |                 | $\dashv$  | +        | $\vdash$  |                | 147        | $\vdash$        | +          | $\vdash \vdash$     | +        | +       | +               | 1        |      |
| <del>     </del> | 48  | -  -  | -        | $\dashv$        | +            | $\dashv$ | <del>                                     </del> |                  | $\dashv$                    |            | 98       |                   | _       | +              |                 | $\dashv$  | $\dashv$ |           |                | 148        | -               | +          | -                   | +        | +       | +               | ┪        |      |
| <del>     </del> | 40  | H   | 一        | -+              | ╁            | +-       | 1-   | <del>  -  </del> | $\dashv$                    | _          | 90       | -                 | +       | 1 -            |                 | -+        | +        | 1         | 1              | 1/0        | -               | _          |                     | $\dashv$ | 1       |                 | 7        |      |

100

Application No.

Index of Claims

Applicant(s)